



Missouri Department of Natural Resources Total Maximum Daily Load Information Sheet

Howell Creek

Waterbody Segment at a Glance:

County: Howell

Nearby City: West Plains

Length of Impairment: 0.3 miles

Pollutant: Chlorine

Source: West Plains Wastewater Treatment Plant



TMDL Priority Ranking: Medium

Description of the Problem

Beneficial uses of Howell Creek

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life and Human Health associated with Fish Consumption.

Use that is impaired

- Protection of Warm Water Aquatic Life

Standards that apply

- The specific criteria (standards) for chlorine are found in Missouri's Water Quality Standards, 10 CSR 20-7.031 Table A, page 17. The standard is 0.01 milligrams per liter (mg/L or parts per million), expressed as total residual chlorine (TRC).

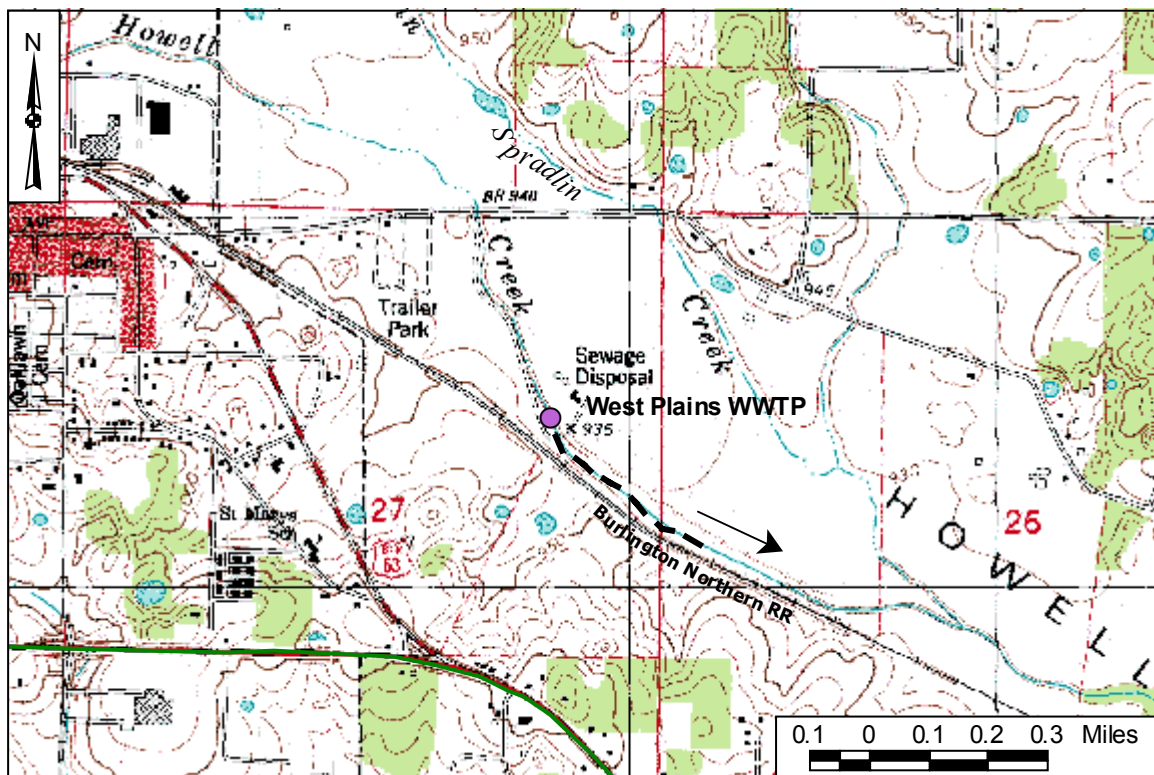
The effluent (discharged water) from the West Plains Wastewater Treatment Plant (WWTP) dominates Howell Creek when water levels are low. Low flow conditions usually occur during late summer and early fall, when rain is less frequent. The presence of chlorine in the stream under low flow conditions creates an unsuitable environment for most species of fish and other aquatic life.

During a low flow survey of Howell Creek in 1993, Department of Natural Resources staff detected a chlorine odor below the WWTP outfall. Experience indicates that when an odor of chlorine is present, there is enough chlorine in the discharge to cause toxicity in the stream. Bleached rocks are also usually observed when excess chlorine is a problem. It was also observed there was no aquatic

life immediately below the outfall, and for a distance downstream the diversity of aquatic organisms was reduced.

The Howell Creek TMDL was approved by the U.S. Environmental Protection Agency Jan. 31, 2001. It calls for the West Plains WWTP to perform dechlorination (a process used to remove chlorine) of the effluent before it is discharged to the creek. The permit will be revised to include a chlorine limit of 0.01 mg/L to ensure the dechlorination is effective. The permit will also require quarterly monitoring of the discharge for the chlorine limit. This will help to ensure protection for the aquatic life in Howell Creek.

Map of West Plains WWTP and Impaired Segment of Howell Creek in Howell County, Missouri



----- Impaired segment

→ Direction of flow

For more information call or write:

Missouri Department of Natural Resources

Water Pollution Control Program

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